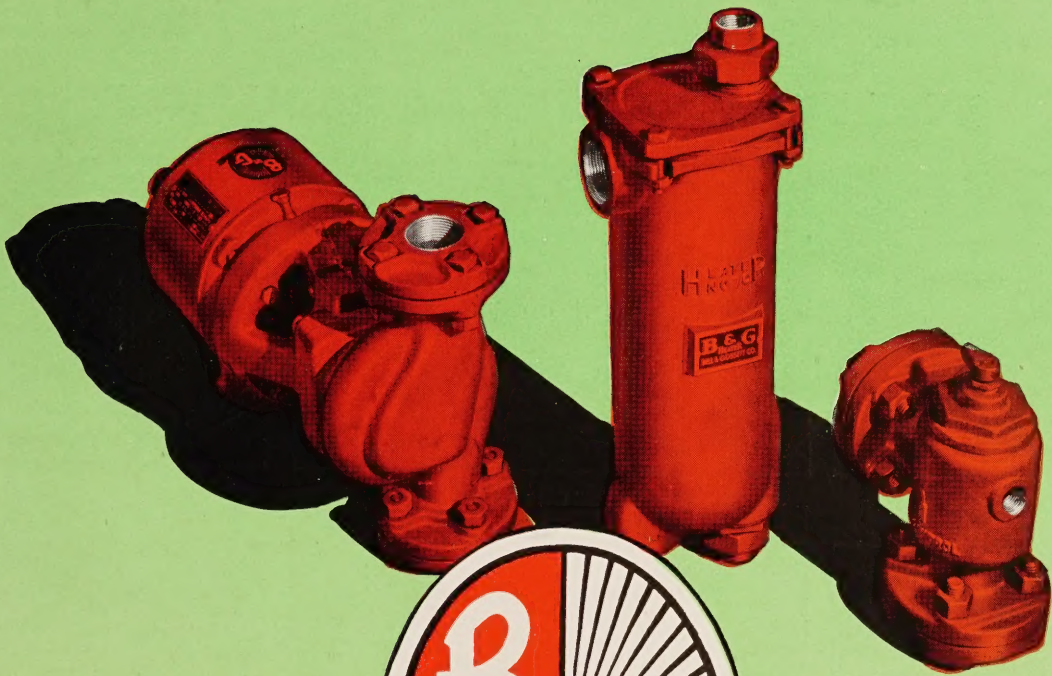


1948



Hydro-Flo

BEST FOR RADIATOR, CON-
VECTOR, UNIT HEATER,
BASEBOARD OR RADIANT
PANEL HEATING SYSTEMS

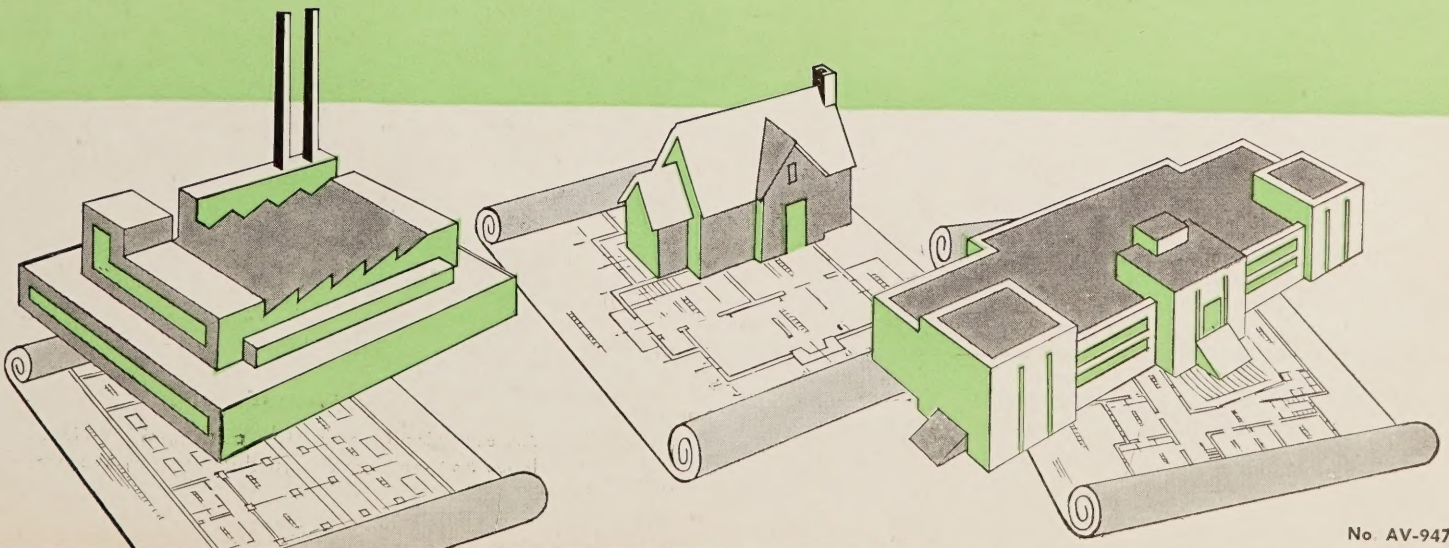


Heating

HEAT AND HOT WATER
FROM THE SAME BOILER



BELL & GOSSETT CO.
MORTON GROVE, ILLINOIS



B & G Hydro-Flo Heating

A FORCED HOT WATER SYSTEM WHICH AUTOMATICALLY MODULATES THE HEAT SUPPLY TO
MAINTAIN A CONSTANT INDOOR TEMPERATURE

BEST FOR ANY KIND OF RADIATION



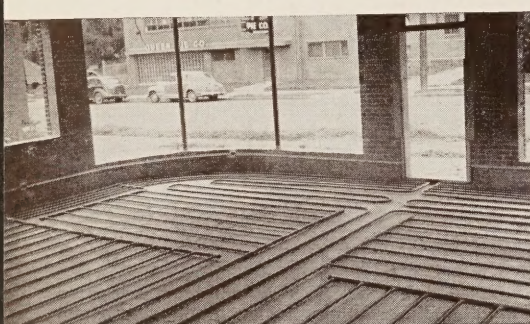
Cast Iron Radiators



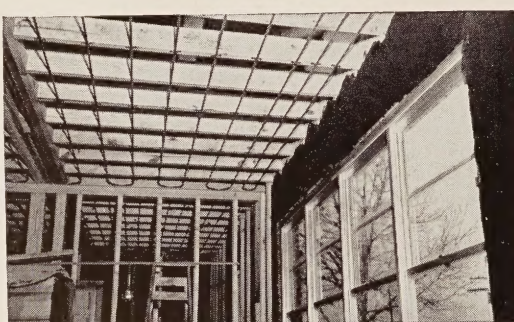
Radiant Baseboards



Convectors



Radiant Floor Panels



Radiant Ceiling Panels



Unit Heaters

B & G Hydro-Flo Heating is designed to take full advantage of the fundamental superiorities of mechanically circulated water as a heating medium. Its meteoric rise in popularity has been uninterrupted for over a decade, until today it is the preferred heating system for homes, apartments, commercial and industrial buildings.

This system establishes ideal comfort conditions because of its ability to measure out heat in the exact quantities required by the weather. Water can be circulated at any temperature between its freezing and boiling points and therefore heat delivery can be accurately controlled. The practical temperature range in the radiators is between 90° and 215°—a spread of 125°. *This wide range permits accurate equalization of heat input and heat loss!*

B & G Hydro-Flo Heat equipment is so simple in character that critical adjustments or complex regulating devices are not required. This is an important advantage from the standpoints of both cost and dependability of operation.

Always a balance between heat input and heat loss

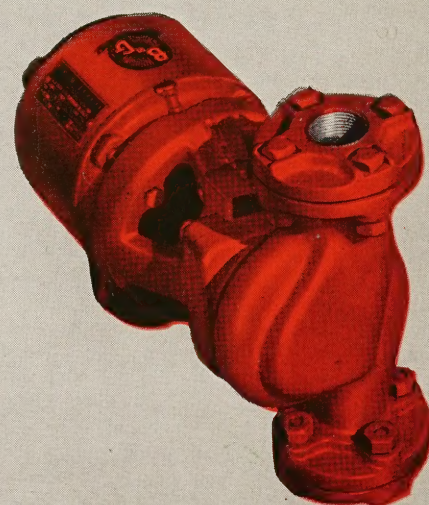
The B & G Hydro-Flo System modulates the heat supply to meet varying weather conditions. As the outdoor temperature becomes colder, the average temperature of the water in the system is increased to compensate for the increased heat loss. When the weather becomes milder, the temperature of the circulating water is decreased accordingly. The net result of this *variable* water temperature is a *constant* room temperature, regardless of how the weather may change.

This ability to modulate the heat supply is particularly valuable in Spring and Fall, when only small amounts of heat are necessary to maintain comfort.

It obviously means greatest operating economy as fuel is burned in amounts just sufficient to meet the heat demand and none is wasted in supplying excess heat.

It should be noted that a B & G Hydro-Flo System provides *sustained* heat—without “all on—all off” periods which tend to

SIMPLE DEPENDABLE EQUIPMENT
... NO CRITICAL ADJUSTMENTS



B & G BOOSTER

An electrically operated pump which circulates hot water through the heating system.

cause air stratification and the condition known as "cold 70." Just as a flywheel smooths out and sustains the flow of power in an engine, the heat-retaining characteristic of water smooths out abrupt rise and fall of room temperature.

Operation with room thermostat control

When the thermostat calls for heat, the pump and burner start simultaneously. The pump rapidly circulates water through the system until the thermostat is satisfied, at which time both burner and pump stop.

On a mild day, because of infrequent demands of the thermostat, the boiler water temperature may have dropped to a comparatively low degree. When the thermostat calls for heat, the pump starts circulating this low temperature water. Since the system itself is filled with water of even lower temperature, the average of the two is a very mild degree of heat. It is hot enough, however, to quickly supply the low BTU requirement of the radiators

on a mild day. The pump, therefore, stops before the water throughout the system reaches a high degree.

On days of severe cold, the operating periods of the pump and burner are longer, permitting the average temperature in the system to be built up to satisfy the heavier heat demand. All intermediate heat requirements are similarly handled in a smooth cycle of operation which eliminates both over and under heating.

Operation with outdoor-indoor control

This type of system differs from the installation controlled by a room thermostat in that water is *continuously circulated* through the system. Hot water from the boiler is admitted to the system in modulated quantities when the temperature of the circulating water drops below the heat requirement of the heating units.

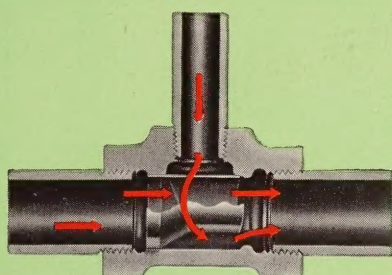
This modulated "blending" of boiler water into the system piping is accomplished through a By-Pass Valve. When no additional heat is required the Valve is closed. When more heat is required, the Valve is gradually opened by the coordinated action of an outdoor temperature bulb and a temperature bulb installed in the supply main.

By this method of control, the temperature of the water in the system is automatically varied to meet outdoor temperature conditions, being always just warm enough to maintain *constant indoor comfort*. The Booster Pump is automatically shut off when outdoor temperature rises above 65°.

Easily Zoned

Zoning a B & G Hydro-Flo Heating System is obviously the ideal way to provide better heat control in apartments, commercial buildings, factories and large residences. Zoning permits different temperatures to be maintained in different sections of the building, thereby providing compensation for variations in the need for heat.

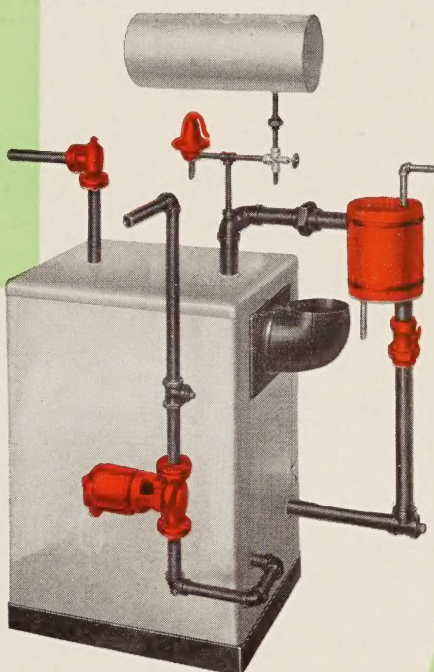
Control of temperature is achieved by either installing a thermostatically controlled B & G Booster Pump in each zone circuit, or by using a single Booster, with the flow of water to each zone controlled by a B & G Motorized Valve.



B & G MonoFlo Fittings
save space, labor and materials

B & G Hydro-Flo Heating can be installed with the conventional two-pipe layout, but the B & G MonoFlo Fitting now makes possible a much simpler one-pipe system with many advantages. This expertly engineered fitting is used to connect the risers to a single main and diverts water into the heating units in the correct amounts for balanced heating.

The piping of a B & G MonoFlo System is easier to conceal and obviously requires less material and less installing labor.



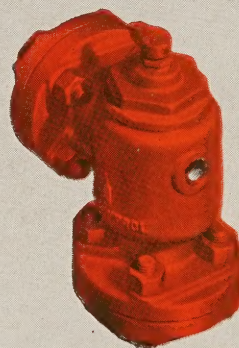
B & G **COMPRESSION TANK**

Provides space for expansion of heated water in the system.



B & G RELIEF VALVE

Protects the boiler by opening whenever pressure exceeds a predetermined limit.



B & G FLO-CONTROL VALVE

Prevents gravity circulation when pump is not running—permits year 'round operation of Water Heater.

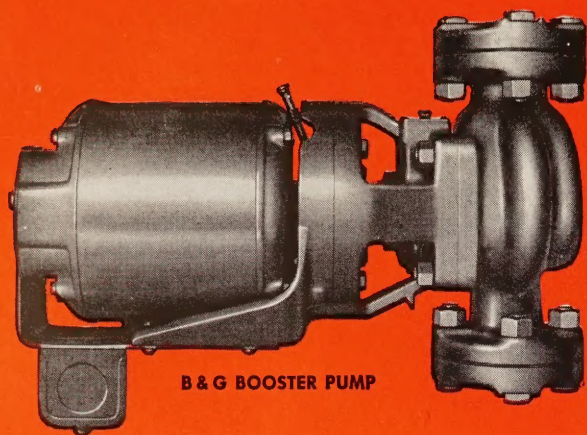


B & G WATER HEATER

Furnishes a year 'round supply of low-cost hot water for kitchen, laundry and bath.



PRODUCT DATA



B & G BOOSTER PUMP

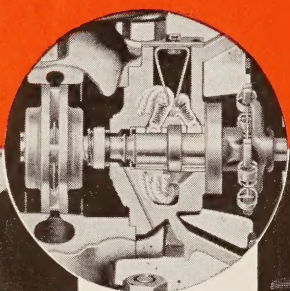
B & G BOOSTER PUMP

Genuine Oil-Circulated Lubrication System

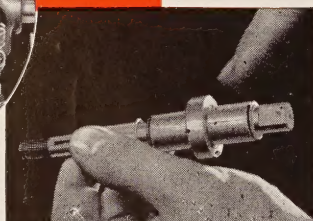
The B & G Booster is a horizontal drive unit, a construction which in combination with the B & G packless Water-tight Seal, permits lubrication by a genuine oil-circulated system. This is one of the reasons why the B & G Booster is so amazingly quiet, dependable and economical. *No other pump built for the same purpose has this superior feature!*

The B & G Water-tight Seal is the patented device which eliminates a stuffing-box—a real economy feature, as a stuffing box is recognized as a power waster. Pump body and impeller are of true centrifugal pump design. Clearance between impeller and pump body is held to very close tolerance, resulting in a minimum of slippage and high efficiency.

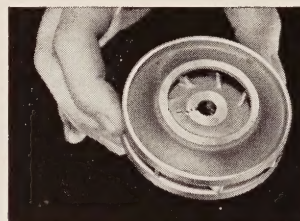
End-play which might cause noise, is effectively prevented by an immovable collar. Another outstanding feature of the Booster is its machine steel shaft construction. Tolerances are maintained within 1/10,000 of an inch. The bearings are generously long, providing smoothness of operation which lengthens the life of the unit. Thermal Overload Equipment affords full protection against motor burn-out.



Oil lubricated bearings



Collar prevents end play



Centrifugal impeller



Water-tight Seal

Rubber mounted motor

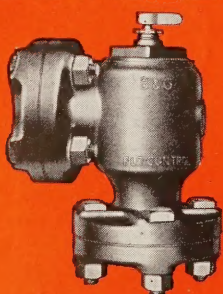
SIZES AND CAPACITIES

Size Number	Pipe Size	**Motor 110 Volt, 60 Cycle Standard Equipment	Delivery Gals. Per Minute	*Sq. Ft. of Radiation on Properly Pipe Sized New Installations		
				150 B.T.U.	200 B.T.U.	240 B.T.U.
H1"	1" FLANGED	1/8 H.P.	25 GALS.	750	562	469
H1 1/4"	1 1/4" FLANGED	1/8 H.P.	35 GALS.	1000	750	675
H1 1/2"	1 1/2" FLANGED	1/8 H.P.	47 GALS.	1750	1312	1094
H2"	2" FLANGED	1/8 H.P.	70 GALS.	3500	2625	2187
H2 1/2"	2 1/2" FLANGED	1/8 H.P.	118 GALS.	4500	3375	2820
HLD3"	3" FLANGED	1/8 H.P.	118 GALS.	4500	3375	2820
HHD3"	3" FLANGED	1/8 H.P.	147 GALS.	5500	4125	3437

* For conversion jobs use larger pump than indicated in the above table.

**Special motors are available for all commonly used voltages and cycles.

B & G FLO-CONTROL VALVES



**ANGLE PATTERN
B & G FLO-CONTROL VALVES**

Flo-Control Valves are used in forced hot water heating systems to prevent the circulation of hot boiler water when heat is not needed in the radiators. They thus permit the year around operation of an Indirect Water Heater as well as helping to maintain a uniform room temperature during the heating season. B & G Flo-Control Valves are available in both angle and straight patterns.

The angle pattern valve represents an improved construction in this type of valve. A special feature is the easy way in which the valve can be opened manually. For automatic operation, the valve stem is screwed all the way down. For gravity circulation, it is screwed all the way up. This is done by simply turning with the fingers the wing extension at the top of the stem. It's as simple as opening a gate valve—no guesswork as to whether the valve is fully opened or closed. This feature is provided so that if current failure should occur, some heat can be obtained through gravity circulation. Valve is easily taken apart for cleaning.

ANGLE PATTERN

Valve Number and Size	A1"	A1 1/4"	A1 1/2"	A2"	A2 1/2"	A3"
Connections	Screwed 2 Ends	Screwed 2 Ends	Flanged 2 Ends	Flanged 2 Ends	Flanged 2 Ends	Flanged 2 Ends
RADIATION CAPACITY IN SQ. FT.	150 B.T.U. 750	200 B.T.U. 562	240 B.T.U. 469	1000 1750	750 1312	675 1094

STRAIGHT PATTERN

Valve Number and Size	S1"	S1 1/4"	S1 1/2"	S2"	S2 1/2"	S3"
Connections	Screwed 2 Ends	Screwed 2 Ends	Screwed 1 End Flanged 1 End	Flanged 2 Ends	Flanged 2 Ends	Flanged 2 Ends
RADIATION CAPACITY IN SQ. FT.	150 B.T.U. 750	200 B.T.U. 562	240 B.T.U. 469	1000 1750	750 1312	675 1094

FOR COMPLETE PRODUCT AND DESIGN INFORMATION,



PRODUCT DATA

B & G MONOFLO FITTINGS

The B & G Monoflo Fitting makes possible a completely practical and efficient one-pipe forced hot water heating system. The obvious advantages of cost, neatness of installation and the elimination of involved designing in the one-pipe Monoflo System have justified its rapid growth in popularity.

1. The Monoflo Fitting is scientifically designed to induce flow into the radiators without excessive turbulence and resultant overloading of pump.
2. It is not dependent upon variations in main sizes for proper resistances.
3. It permits radiators *below* the main to be successfully circulated.
4. It maintains a uniform distribution of hot water to *all* radiators.

SIZES—CAST IRON FITTINGS

Order by Number Only and Indicate Branch Tapping Size				Tapping Sizes	
For Radiation Above Main		For Radiation Below Main		Main	Branch
Supply	Return	Supply	Return		
SA-1	RA-1	SB-1	RB-1	1"	1/2" OR 3/4"
SA-1 1/4	RA-1 1/4	SB-1 1/4	RB-1 1/4	1 1/4"	1/2" OR 3/4" OR 1"
SA-1 1/2	RA-1 1/2	SB-1 1/2	RB-1 1/2	1 1/2"	1/2", 3/4" OR 1"
SA-2	RA-2	SB-2	RB-2	2"	1/2", 3/4" OR 1"
SA-2 1/2	RA-2 1/2	SB-2 1/2	RB-2 1/2	2 1/2"	1/2", 3/4", 1" OR 1 1/4"
SA-3	RA-3	SB-3	RB-3	3"	1/2", 3/4", 1" OR 1 1/4"

B & G COMPRESSION TANK—With Airtrol Fitting

A compression tank provides space for the expansion of water in the system which occurs during each heating cycle. It permits higher temperatures without boiling. For most satisfactory and economical operation of a forced hot water system a compression tank should be installed.

Compression tanks can now be equipped with a B & G Airtrol—a new and positive method of removing air from hot water heating systems.

Tank Number	Tank Capacity Gallons	*Capacity Sq. Ft. Radiation	Tank Dimensions
15	15	UP TO 300 FT.	12" X 30"
18	18	UP TO 500 FT.	12" X 36"
21	21	UP TO 700 FT.	12" X 42"
24	24	UP TO 1000 FT.	12" X 48"
30	30	UP TO 2000 FT.	12" X 60"
40	40	UP TO 3000 FT.	13" X 71"

*Capacities are based on forced circulation and small pipes. On old systems use next larger tank.

B & G RELIEF & REDUCING VALVES

Simplex Relief Valve

The standard of comparison in its field! Body is of heavy construction and valve seat of rust-proof bronze. Any pressure in excess of 30 lbs. lifts the diaphragm to relieve the system. The large area of the diaphragm assures ample lifting power and positive action. No guides to set up friction or corrode.

No. 12 Reducing Valve

An excellent fast-filling valve which automatically keeps the system properly filled with water. All working parts are of brass, with easily cleaned built-in strainer. Factory adjusted at 12 lbs., suitable for 1, 2 and 3-story buildings.

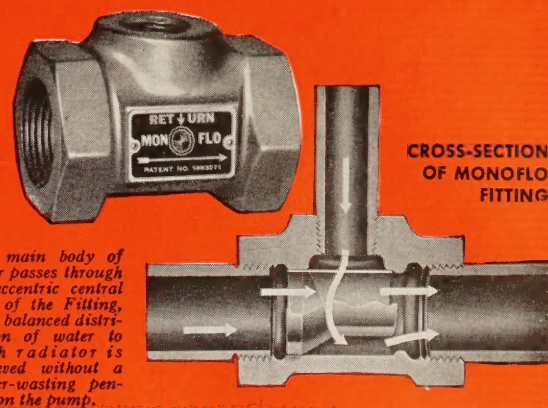
Number	Size	Max. Setting	Number	Size	Body Construction
SIMPLEX	3/4"	30 LBS.	12	3/4"	IRON

B & G TANKLESS HEATER

The B & G Tankless Heater is designed to meet the need for a heater of unusual capacity which can be installed where space is lacking for storage tanks. It saves the cost of a storage tank, pipe, fittings and stand. The use of a tempering valve is recommended on all tankless heater installations.

B & G Heater Number	Capacities in Gallons Heated From 40°F. to 140°F.				Heating Surface in Square Feet	Coil Openings in Inches	Boiler Connections in Inches	Approx. Shipping Weight Lbs.
	Boiler Water at							
	180°F.		200°F.					
	Per Hr.	Per Min.	Per Hr.	Per Min.				
T-12	210	3½	315	5	12	¾	2	92
T-14	240	4	365	6	14	¾	2	100
T-16	300	5	450	7½	16	¾	2	108
T-20	360	6	540	9	20	¾	2½	114
T-30	480	8	750	12½	30	¾	3	154

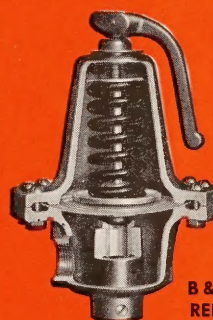
Where water pressures exceed 40 lbs., it is advisable to install a B & G Pressure Reducing Valve.



SIZES—COPPER FITTINGS

Order by Number Only and Indicate Branch Tapping Size				Tapping Sizes	
For Radiation Above Main		For Radiation Below Main		Main	Branch
Supply	Return	Supply	Return		
SA-1	RA-1	SB-1	RB-1	1"	1/2" OR 3/4"
SA-1 1/4	RA-1 1/4	SB-1 1/4	RB-1 1/4	1 1/4"	1/2" OR 3/4"
SA-1 1/2	RA-1 1/2	SB-1 1/2	RB-1 1/2	1 1/2"	1/2", 3/4" OR 1"
SA-2	RA-2	SB-2	RB-2	2"	1/2" OR 3/4"

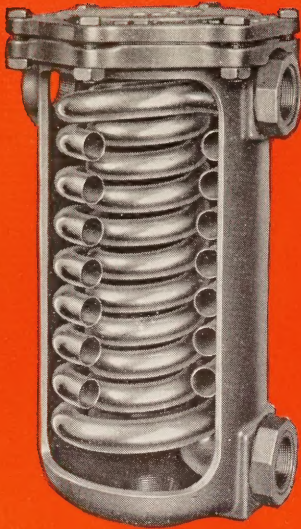
B & G COMPRESSION TANK WITH AIRTROL FITTING



For residential use, where hot water is drawn in comparatively small quantities, little load is placed on the boiler. Where the hot water "draw" is more or less constant, care must be taken that the boiler has sufficient capacity.



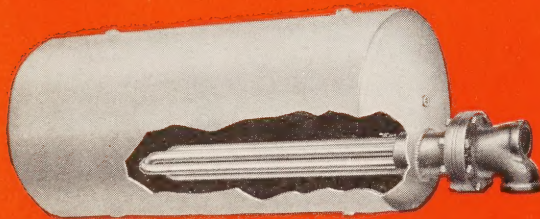
PRODUCT DATA



B & G Indirect Heater

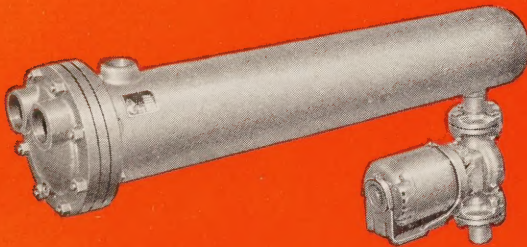
The B & G Indirect Heater is offered in vertical single and double coil units and in horizontal models where larger capacities are required. The jacket is of sturdy construction, while the tubes, heads and all parts in contact with domestic water are of rust-proof copper or bronze. Coils are easily removed. The generous heating surface built into B & G Indirect Heaters assures large capacity and quick recovery.

For best results, storage tank should be horizontal and as high as possible. On steam boilers, install with top of heater close to the water line. On hot water boilers, keep top of heater level with or above top of boiler.



B & G Tank and Heater

Tanks are of galvanized welded steel (127 lbs. working pressure—300 lb. test) with the collar of the heating unit welded into the head of the tank. Heating coils are of copper tubing. Two outlets at top and bottom of tank provide for easy connection of hot and cold water lines. This heater embodies the same fine materials and workmanship found in all B & G Water Heaters.



B & G Type "WU" Heater

The "WU" slashes material and labor cost! Because of pumped circulation, the connecting pipe and fittings are radically reduced in size. Hence, material cost is much lower and cutting and threading can be done on the job. No storage tank needed—another substantial saving.

B & G INDIRECT HEATER

With the proper electrical controls, this heater will furnish an ample supply of hot water, *winter and summer*, with amazing economy. It is particularly well adapted to cast iron sectional steam or hot water boilers and should be used with a storage tank of suitable capacity.

Description	Heater Number and Size	CAPACITIES—Gals. in 3 Hours—40° to 140° With Domestic Water in Coil				Boiler Conn. Inches	Service Water Conn. Inches
		Boiler Water 212°	Boiler Water 200°	Boiler Water 180°	Steam of 1 Lb. Pressure		
SINGLE COIL HEATERS <i>Equipped with 2 heavy brass Unions and removable coils.</i>	30	30	25	18	60	1	3/4
	40	40	33	24	80	1	3/4
	52	52	42	31	104	1	3/4
	70	70	57	43	140	1 1/4	1
	90	90	74	55	180	1 1/2	1 1/2
	100	100	82	61	200	1 1/2	1 1/2
	120	120	98	73	240	1 1/2	1 1/2
DOUBLE COIL HEATERS <i>Removable coils</i>	160	160	131	98	320	2	1 1/2
	200	200	164	122	400	2	1 1/2
	300	300	246	183	600	2	1 1/2
	400	400	328	244	800	2	1 1/2
	500	500	410	305	1000	2	1 1/2
HORIZONTAL TUBE HEATERS <i>Removable coils</i>	600	600	492	366	1200	3	2 1/4
	800	800	656	488	1600	3	2 1/2
	1000	1000	820	610	2000	3	2 1/2
	1200	1200	984	732	2400	4	3
	1600	1600	1312	976	3200	4	3
	2000	2000	1640	1220	4000	6	3
	2500	2500	2050	1525	5000	6	3
	3000	3000	2460	1830	6000	6	3

For year around hot water on automatically fired installations, select heater on 180° boiler water.

B & G TANK AND HEATER

The B & G Tank and Heater offers many advantages, as it both heats and stores the water in the same unit. It can be operated by passing either steam or hot water through the coil and is an excellent heater for hard water territories. Any lime deposit forms on the outside of tubes and is easily removed.

Number	Tank Cap. Gals.	Capacities—Gals. in One Hour				Dimensions			
		Heated from 50° to 150° Below Water Line			Heated from 50° to 180°F. Steam of 1 Lb. Gauge Pressure	Tank			Inlet & Outlet Conn's.
		Boiler Water 212°	Boiler Water 200°	Boiler Water 180°		Width	Length	Tank Openings	
40	40	80	70	50	130	16"	48"	4—1"	2"
52	52	80	70	50	130	16"	60"	4—1"	2"
66	66	80	70	50	130	18"	60"	4—1"	2"
82	82	100	88	62	160	20"	60"	4—1 1/2"	2"
100	100	100	88	62	160	22"	60"	4—1 1/2"	2"
120	120	100	88	62	160	24"	60"	4—1 1/2"	2"
144	144	120	105	76	197	25"	72"	4—1 1/2"	2"
180	180	180	164	110	290	30"	60"	4—1 1/2"	3"

B & G TYPE "WU" INSTANTANEOUS HEATER

This unit is equipped with a B & G Booster Pump which pumps boiler water through the shell, greatly increasing the capacity of the heater. The Booster also provides a means of closely controlling service water temperature. When service water goes below the desired temperature, the Booster pumps boiler water through the shell until water is again at correct temperature.

Cap. G.P.H. 40°-140°	Boiler Water in Shell—180°				Boiler Water in Shell—200°				Boiler Water in Shell—210°			
	Water Heater Number	Booster Size Needed	Boiler Conn's	Coil Conn's	Water Heater Number	Booster Size Needed	Boiler Conn's	Coil Conn's	Water Heater Number	Booster Size Needed	Boiler Conn's	Coil Conn's
200	WU46-42	H1 1/2"	1 1/2	1	WU45-42	H1 1/2"	1 1/2	1	WU44-42	H1 1/2"	1 1/2	1
300	WU65-42	H1 1/2"	2	1 1/2	WU46-42	H1 1/2"	1 1/2	1	WU45-42	H1 1/2"	1 1/2	1
400	WU65-42	H2"	2	1 1/2	WU64-42	H2"	2	1 1/2	WU46-43	H2"	2	1
500	WU66-43	H2"	2	1 1/2	WU65-43	H2"	2	1 1/2	WU64-43	H2"	2	1 1/2
600	WU85-43	H2"	2	2	WU66-43	H2"	2	1 1/2	WU65-43	H2"	2	1 1/2
800	WU86-44	H2 1/2"	3	2	WU85-43	H2"	2	2	WU66-43	H2"	2	1 1/2
1000	WU87-45	HHD3"	3	2	WU85-44	H2 1/2"	2 1/2	2	WU67-44	H2 1/2"	2 1/2	1 1/2
1200	WU88-46	HHD3"	3	2	WU86-44	H2 1/2"	3	2	WU85-44	H2 1/2"	2 1/2	2
1400	WU89-46	HHD3"	3	2	WU87-44	H2 1/2"	3	2	WU86-44	H2 1/2"	3	2
1600	WU106-45	HHD3"	3	3	WU87-44	HHD3"	3	2	WU86-44	HHD3"	3	2
1800	WU107-46	HHD3"	3	3	WU88-45	HHD3"	3	2	WU87-45	HHD3"	3	2
2000	WU108-46	HHD3"	3	3	WU89-45	HHD3"	3	2	WU88-45	HHD3"	3	2

FOR COMPLETE PRODUCT AND

SPECIFICATIONS FOR *Hydro-Flo* HEATING SYSTEM

Plans and Specifications: These specifications and plans shall be considered as a part of the heating contract subsequently executed.

The spirit as well as the letter of the plans and specifications shall be followed and all work shall be executed according to the true intent and meaning of plans and specifications, both of which are intended to include everything requisite for a complete Monoflo System of Hot Water Heating.

Should any error or omission exist in either or both of these plans or specifications or conflict one with the other, the heating contractor shall not avail himself of such unintentional error, omission or conflict, but shall have same explained and adjusted before signing the heating contract or proceeding with the work. Otherwise, he shall, at his own expense, supply the proper materials and labor to make good any damage to, or defect in his work, caused by such error, omission or conflict.

The amount of radiating surface, piping, etc., for this installation has been determined from the tables shown in the B & G Handbook based on information shown on the building plans and supplemental data furnished. Unless otherwise set forth in the information supplied it is assumed that the building or buildings are of reasonably good construction, windows and openings reasonably tight, unduly exposed floors, walls and ceilings properly protected or insulated.

In the absence of specific information relative to unusual conditions, exposures, air leakages, etc. on building plans or supplemental data furnished, the heating contractor shall not be called upon to assume any responsibility until such unusual and unforeseen conditions are corrected.

Under the foregoing conditions this specification and accompanying plans provide for a heating system that will give an average temperature to the space to be heated of 70 degrees Fahr., unless otherwise noted when the outside temperature is ____

General Conditions: The heating contractor shall take all legal and necessary precautions against accidents, injuries or damage to persons or property during the progress of the work, and shall be responsible for and save harmless the owner from liability due therefrom.

All work must be done in strict accordance with the Rules and Regulations of the American Institute of Architects, the Board of Fire Underwriters, State, County or Municipal Ordinances, Rules and Regulations.

Upon completion of the Contract all remaining materials and rubbish resulting from this work shall be removed from the building and premises by the Heating Contractor.

Materials and Workmanship: The materials used throughout shall be the best of their respective kinds and all work shall be executed with the maximum speed consistent with good workmanship.

Boilers: Furnish and install on a substantial foundation, approximately where shown on the plans: as manufactured by: equipped for:

Each Boiler to have a rating of not less than MBH. These ratings are to be in accordance with the National Association of Heating & Piping Contractors, the Institute of Boiler & Radiator Manufacturers, or the Steel Heating Boiler Institute, requirements.

Each Boiler is to be completely equipped with thermometer pressure gauge, etc., and is to be properly insulated with:

Fuel Burner: Furnish and install No.

Burner as manufactured by: which manufacturer guarantees to have sufficient capacity to carry the full rated load of the boiler or boilers. The burner shall be equipped with a master relay which will operate safely and satisfactorily with the specified controls under part of this specification covering Controls.

Domestic Water Heater: Furnish and install in accordance with the manufacturer's recommendations No. Water Heater as manufactured by the BELL & GOSSETT Company. The heater shall have a capacity of gallons per hour based on a temperature rise of 100° Fahr. with boiler water at degrees Fahr. surrounding the coils in the heater.

Circulating Pumps: The water shall be circulated through the heating system by oil lubricated horizontal centrifugal pumps

installed as shown on the plans. The pumps shall have a hardened ground and polished steel shaft with integral thrust collar. The shaft shall be supported by two horizontal bronze bearings designed to circulate oil. These pumps are to be without stuffing boxes and are to be equipped with a water tight seal to prevent leakage. Power shall be provided by hp. horizontal motors and shall be transmitted to the pump shaft through a self-aligning multispring flexible coupler. The motors shall have a built-in automatic thermal overload circuit breaker or special type overload starting switch. These pumps shall be as manufactured by the BELL & GOSSETT COMPANY. The pump characteristics are to be as follows:

HEAD	G.P.M.	H.P.	CURRENT
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- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Expansion Tanks: Furnish and install a No. B & G Compression Tank of gallons capacity size x as noted on the plans. Tank shall be equipped with all necessary fittings. Also furnish and install B & G Air Charger and Tank Drainer Valves or a B & G Airtrol with 1/8-in. pipe tube inside tank as recommended by the manufacturer and with suitable drain line.

Relief Valves: Furnish and install as shown on the plans No. B & G Relief Valve set to relieve at thirty pounds pressure.

Flow Control Valves: Furnish and install as noted on the plans B & G Flo-Control Valves of the sizes indicated to control the circulation of the boiler water when the pump is not operating. If Angle type Flo-Control Valves are used they must be so constructed that the entire valve mechanism can be removed from the body for cleaning and must be equipped with a rising stem opening mechanism to open the valve for gravity circulation or draining the system, if desired.

Mains and Branch Circuits: The mains and branch circuits are to be sized as indicated on the plans and are to be graded as indicated. Provision shall be made to vent all high points and drain all low points.

Branch Connections: Furnish and install a special Monoflo diverting tee and a standard cast iron tee at each radiator's connections to the main. The Monoflo tee shall be installed in either the supply or return connection. When indicated on the plans a Monoflo tee shall be installed at both supply and return connections. These Monoflo tees shall accomplish the diversion of water to the radiator by means of the eccentric sleeve within them and shall be as manufactured by the BELL & GOSSETT COMPANY. Branch connections shall be made from the top of the main unless otherwise noted.

Risers and Stubs: Risers and stubs shall be sized exactly as noted on the plans and shall be concealed within the structure until immediately adjacent to the radiator. Care shall be taken that each runout is so pitched that it can vent itself. Risers shall be installed in the inside walls wherever possible and where in outside walls they shall be properly insulated with not less than 1 1/4 in. thickness of air cell asbestos covering.

Radiators: The radiators shall be as manufactured by and shall be of sizes, capacity and location as shown on the plan. Each radiator will be equipped with a hand control valve, and a key control air vent.

Convectors: The convectors shall be as manufactured by and shall be of sizes, capacity and locations shown on the plan. Each convector shall be adequately vented without removal of convector cover. The Contractor shall check radiator and convector capacities, and if in his opinion the capacity is insufficient, he shall so notify the Architect.

Floor Plates and Sleeves: Furnish and install wherever pipes pass through finished floors, ceilings or partitions, approved floor and ceiling plates. Furnish and install sleeves wherever pipes pass through concrete or masonry.

Boiler Feed Water: Water service is to be brought within five feet of the boiler by others, and this Contractor shall connect it to the boiler through a valve or cock, using galvanized pipe for the connection.

(OVER)

WATER HEATERS FOR HOME AND INDUSTRY



SPECIFICATIONS (Continued)

Electrical Work: Electric service is to be brought within ten feet of the boiler by others. This Contractor shall make provision for wiring said electric service to the necessary controls for the system, as hereinafter specified, and to the operating motors.

Painting: This Contractor is to paint all exposed piping installed by him with one coat of black asphaltum paint.

Covering: All piping in exposed walls or in unexcavated spaces or in tile shall be covered by 5-ply, not less than 1 1/4 in. thickness, asbestos covering. Other piping shall be covered as noted on plan. All tile for pipe to be installed watertight.

Breeching: Furnish and install securely No. gauge smoke breeching between the boiler and the stack. Breeching shall not extend into stack further than the innerlining, and shall be cemented in place.

Pipe and Fittings: All piping is to be new, standard weight steel, and fittings to be new, standard weight cast iron. Hangers shall be used and installed at intervals of 10 feet to support properly all horizontal piping. All pipe to be reamed after cutting and threading, and pipe compound is to be applied to male threads only.

Noise: The system is to be installed in such a way that it will be free to expand and contract without noise, and without damage to itself or to the building.

Associate work: This Contractor shall consult with the Architect and with the other contractors in arranging for the installation of this system to eliminate interference. Other contractors shall give full cooperation, and shall perform such of their duties as are necessary to the system with all dispatch.

Guarantee: This Contractor guarantees that this system as installed shall be capable of maintaining a minimum temperature of 70 degrees in all spaces connected to the system, unless otherwise specified, when the outside temperature is. degrees Fahrenheit. He further guarantees all material and workmanship against original defects for a period of one year from the date of installation.

On all automatically fired jobs, refer to B & G Handbook for control recommendations



Send for the B & G Catalog and Handbook
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Centrifugal Pumps

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Heat Transfer Equipment

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BELL & GOSSETT CO.
MORTON GROVE, ILLINOIS

No. AV-947